

USAF Declass/Release Instructions On File

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TO AFSSO USAF

TOP SECRET FROM: ND-0002-9. THIS IS A MOTOR DROME

MESSAGE TO TSO FISHER FOR PASSING TO [REDACTED]

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[REDACTED] AFTER IT HAS BEEN SHOWN TO GEN WATSON AND/OR
GEN WALSH. FROM TCO POTTER.

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THE FLIGHT TEST RESULTS SUBMITTED BY

[REDACTED] HAVE BEEN REVIEWED AND THE FOLLOWING
COMMENTS ARE SUBMITTED:

(A) THERE ARE NO SOVIET FIGHTER AIRCRAFT CAPABLE
OF INTERCEPTING THE U-2 AIRPLANE WITHOUT THE USE OF
AIR-TO-AIR MISSILES. IT IS ESTIMATED THAT IR, BEAM
RIDER, AND SEMI-ACTIVE HOMING MISSILES ARE CURRENTLY
AVAILABLE FOR USE BY SOVIET FIGHTERS.

(B) OF THE KNOWN AIRCRAFT CURRENTLY IN OPERATION
WITH THE SOVIET AIR FORCES ONLY FISHPOT AND FITTER ARE
ESTIMATED TO HAVE A CO-ALTITUDE ATTACK CAPABILITY AGAINST
THE U-2. HOWEVER, THIS CAN BE ACCOMPLISHED ONLY IN A
DYNAMIC-CLIMB CONDITION WITH CONTINUALLY VARYING
ALTITUDE AND SPEED, AND WITH LOSS OF CONTROL EFFECTIVENESS
AND MANEUVERABILITY AT OR NEAR THE PEAK POINT. THE

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DYNAMIC CLIMB CAPABILITIES OF FISHPOT AND FITTER ARE CONSIDERABLY LESS THAN THE F-104 CAPABILITY, ESPECIALLY WHEN MISSILES ARE BEING CARRIED. COMPUTER DATA INDICATE THAT FITTER COULD NOT EXCEED 75,000 FEET IN THE CLEAN CONFIGURATION UNDER OPTIMUM CONDITIONS.

(C) MALFUNCTION OF THE F-104 AI RADAR AT HIGH ALTITUDES IS PROBABLY CAUSED BY THE DECREASED AMBIENT PRESSURES AT THESE ALTITUDES. ADEQUATE PRESSURIZATION OF THE AI RADAR COMPONENTS WOULD SIGNIFICANTLY HELP. FISHPOT IS ESTIMATED TO HAVE A SEARCH TRACK RADAR AND IR SIGHTING SYSTEM SIMILAR TO THE F-104, GIVING AN ALL WEATHER CAPABILITY. IT IS ESTIMATED THAT THE FISHPOT RADAR WOULD PROBABLY SUFFER SUCH DIFFICULTIES UNDER SIMILAR CONDITIONS, HOWEVER, ADEQUATELY PRESSURIZING THE AI EQUIPMENT IS NOT TOO DIFFICULT TO ACCOMPLISH.

(D) IT IS ESTIMATED THAT FITTER IS EQUIPPED WITH INFRA-RED ANGLE TRACK AND RANGE ONLY RADAR. THIS IN CONJUNCTION WITH A CLOSE CONTROL GCI ENVIRONMENT PROVIDES A CAPABILITY FOR A NON-VISUAL CLEAR AIR MASS INTERCEPTION. IT IS BELIEVED THAT IR SIGHTING SYSTEMS ARE NOT SUBJECT

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TO THE SAME ALTITUDE DEGRADATION PENALTIES THAT AFFECT
ALL RADAR SYSTEMS. THE EGLIN FLIGHT TEST RESULTS DO NOT
SHOW THE USE AND EFFECTIVENESS OF IR SIGHTING SYSTEMS
AT ALTITUDE.

(E) CONSIDERATION OF THE USE OF DYNAMIC CLIMB
ATTACKS RESULT IN THE FOLLOWING CONCLUSIONS:

(1) ANY MANEUVERING REQUIRED TO POSITION THE
AIRPLANE MUST BE ACCOMPLISHED PRIOR TO OR DURING THE
INITIAL PART OF THE CLIMB.

(2) DISTANCE FROM THE INITIAL ACCELERATION POINT
TO PEAK OUT POINT IS CONSIDERABLE AND GENERALLY PRECLUDES
THE USE OF THE AIRCRAFT'S TRACKING RADAR UNTIL THE
AIRCRAFT IS ABOVE ITS CRITICAL MANEUVERING ALTITUDE.

(3) THE AIRCRAFT WOULD HAVE TO ARRIVE AT
ALTITUDE, ON TARGET, AND IN A MISSILE FIRING POSITION
SIMULTANEOUSLY TO SUCCESSFULLY PERFORM ITS INTERCEPTION
MISSION.

BASED ON THESE CONSIDERATIONS OF THE FLIGHT TEST RESULTS,
IT IS FELT THE CHANCES OF SUCCESS OF A DYNAMIC CLIMB OF
FISHPOT AND FITTER IN A CO-ALTITUDE ATTACK ON THE U-2

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IS RATHER POOR. HOWEVER, IT IS FELT THAT IT IS NOT NECESSARY TO ATTACK ONLY AT THE CO-ALTITUDE POSITION. IT IS POSSIBLE TO LAUNCH THE MISSILES AT ANY TIME THAT LOCK ON IS ACQUIRED, PROBABLY FROM AS MUCH AS 10-15,000 FEET BELOW THE U-2. THE ADVANTAGES OF LAUNCHING AT SUCH A POINT ARE THAT THE ATTACKING AIRPLANE HAS MORE MANEUVER MARGIN REMAINING FOR FINAL POSITIONING THAN HE WOULD HAVE UPON REACHING CO-ALTITUDE, AND THAT THE RELIABILITY OF THE FIRE CONTROL SYSTEM IS BETTER AT LOWER ALTITUDES. IT IS NOT APPARENT FROM THE TEST RESULTS WHY THE F-104 WAS NOT UTILIZED IN THIS MATTER.

(F) CONSIDERATION OF THE SOVIET ALL-WEATHER FIGHTERS IN ADDITION TO FISHPOT THAT WOULD BE OPERATIONAL FOR THE TIME PERIOD CONSIDERED, SHOWS THAT FLASHLIGHT A AND THE ESTIMATED 1959 ALL-WEATHER FIGHTER WOULD BE AVAILABLE FOR ATTACKS AGAINST THE U-2. AS PUBLISHED IN ATIC STUDIES, FLASHLIGHT A CAN BE EMPLOYED IN NON-CO-ALTITUDE (PULL UP) TYPE ATTACKS AT SUB-SONIC SPEEDS. THE 1959 ALL-WEATHER FIGHTER PROVIDES AN IMPROVED SERIES OPERATING IN THE MACH 1.5 SPEED REGIME, AND HAVING A COMBAT CEILING OF

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60,000 FEET. AGAIN, THIS AIRPLANE CAN BE EMPLOYED IN NON-CO-ALTITUDE (PULL UP) TYPE ATTACKS WHICH WERE PROVEN SO SUCCESSFULLY IN THE F-102 INTERCEPTIONS OF THE U-2.

(G) THERE HAS BEEN CONSIDERABLE INTELLIGENCE RECEIVED INDICATING THE POSSIBLE ADDITION OF ROCKET MOTOR PROPULSION UNITS ON SOME FRESCO AND FLASHLIGHT FIGHTERS. IT IS BELIEVED THAT THE INSTALLATION OF THESE ROCKET MOTORS IS NOT A GENERAL RETRO-FIT MODIFICATION PROGRAM. IT IS POSSIBLE THIS ROCKET MOTOR INSTALLATION IS INTENDED FOR USE IN ATTACKS AGAINST SELECTED HIGH-ALTITUDE TARGETS SUCH AS THE U-2. AS WAS SHOWN IN THE FLIGHT TEST RESULTS ADDITIONAL THRUST DURING A PULL-UP MANEUVER WOULD BE USEFUL SO THAT CONTROL CAN BE MAINTAINED WHILE ATTEMPTING LOCK ON AND MISSILE FIRING.

(H) DUE TO THE DIFFICULTY IN SETTING DOWN IN DETAIL ALL OF THE RAMIFICATIONS OF THE EGLIN SPECIAL FLIGHT TEST RESULTS ON ESTIMATED SOVIET INTERCEPTOR AIRCRAFT CAPABILITIES, IT IS SUGGESTED THAT A MEETING BE HELD AT ATIC WITH YOUR ORGANIZATION AS SOON AS POSSIBLE TO FULLY EXPLOIT THESE RESULTS.

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